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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,376	09/24/2001	Masatoshi Takada	2001_1305A	7495

513 7590 09/29/2004

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EXAMINER	
ENG, GEORGE	

ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/960,376	TAKADA, MASATOSHI	
	Examiner	Art Unit	
	George Eng	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed 9/9/2003 (paper no. 2) has been considered.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 10/101,072 and claims 1-28 of copending Application No. 09/960,377. Although the conflicting claims are not identical, they are not patentably distinct from each other

because all the claimed limitation, such as input signal control means, interference-signal estimation means, interference signal extraction means and inference signal removing means, are transparently found in copending Application No. 10/101,072 and copending Application 09/960,377 with obvious wording variations.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1, 11 and 15 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility.

Regarding claims 1, 11 and 15, each claim is directed to an interference-signal removing apparatus for use in removing only interference signals having level exceeding a predetermined threshold from input signal that has no specific, substantial and credible utility.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 11 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kochi et al. (US PAT. 6,181,731 herein after Kochi).

Regarding claim 1, Kochi discloses a narrow-band interference signals elimination device (1, figure 1) for removing narrow-band interference signals from input signals, i.e., spread signal, including wide-band desired signals and the narrow-band interference signal (col. 4 lines 46-52). In addition, Kochi also discloses the narrow-band interference signals elimination device capable of removing only interference signals having level exceeding a predetermined threshold from input signals (col. 7 lines 2-45).

Regarding claims 11 and 15, the limitations of the claims are rejected as the same reasons set forth in claim 1.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2-10, 12-14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhodzishsky et al. (US PAT. 6,219,376 hereinafter Zhodzishsky) in view of Gordy et al. (US PAT. 4,186,349 hereinafter Gordy).

Regarding claim 2, Zhodzishsky discloses an apparatus for suppressing a narrow-band interference signals from input signals (Uk(t), figure 4) including wide-band desired signals and the narrow-band interference signals comprising interference-signal estimator (20, figure 4) for estimating interference signal included in input signals in accordance with the input signal, interference-signal extraction means (15, figure 4) for extracting interference signals included in input signals in accordance with an estimation result by the interference-signal estimation means, and interference-signal removal means (40, figure 2) for removing extracted interference signal from input signals (col. 13 line 12 through col. 15 line 67 and col. 21 line 41 through col. 25 line 67). Zhodzishsky differs from the claimed invention in not specifically teaching the apparatus comprising input-control means for restricting the effective word length of a digital value of the input signal. However, it is old and notoriously well known in the art of using input-signal control means for restricting the effective word length of a digital value of the input signal by adding noise to input signal, thereby minimizing the interference effect of narrow-noise band signals superimposed upon desired signals, for example see Gordy (col. 1 line 62 through col. 5 line 7). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Zhodzishsky in having input-control means for restricting the effective word length of a digital value of the input signal, as per teaching of Gordy, in order to minimize the interference effect of narrow-noise band signals superimposed upon desired signals.

Regarding claim 3, Zhodzishsky teaches to extract interference signals from input signal (col. 14 lines 28-33).

Regarding claim 4, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 5, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claim 6, the limitations of the claim are rejected as the same reasons set forth in claim 2. In addition, Gordy discloses to multiply input signals by a control coefficient which is obviously less than 1 (col. 3 lines 10-45).

Regarding claim 7, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 8, Zhodzishsky discloses to estimating levels of interference signals included in input signals and control input signals in accordance with estimated interference signal level (col. 14 lines 25-42).

Regarding claims 9-10, the limitations of the claims are rejected as the same reasons set forth in claim 8.

Regarding claim 12-13 and 16-17, the limitations of the claims are rejected as the same reasons set forth in claim 2.

Regarding claims 14 and 18, the limitations of the claims are rejected as the same reasons set forth in claim 6.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rakib et al. (US PAT. 6,426,983) discloses a narrow band interference excision circuit for use in broadband digital data communication system for eliminating narrow band noise power (col. 2 line 35 through col. 3 line 28).

Yang (US PAT. 6,407,699) discloses a method for rapidly extracting time and frequency parameters from spread spectrum radio signals under interference (abstract).

Bergstrom et al. (US PAT. 6,122,309) discloses a method for performing interference suppression using modal format estimates (abstract).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Eng whose telephone number is 703-308-9555. The examiner can normally be reached on Tue-Fri 7:30 AM-6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A. Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George Eng
Primary Examiner
Art Unit 2643